

He claims that his wife and he have been cured of many ailments since they adopted this dietary. Whether it is as harmless as he supposes is doubtful; at any rate, Metchnikoff⁵ points out the danger of acquiring harmful intestinal parasites from raw fruits and vegetables, and urges that they should be at least scalded before being eaten. The frequency of bowel complaints in countries where fruit is abundant tends to support this view.

How far it is possible to supply the needs of the body on such a dietary can be answered with some precision. Professor M. E. Jaffa, of the California Agricultural Experiment Station, has studied the dietaries of the fruitarians of that State. He gives the following as a sample of the day's rations: Apples, 475 grams (1 lb.); bananas, 110 grams (3½ oz.); oranges, 850 grams (28½ oz.); dates, 5 grams (¼ oz.); olive oil, 10 grams (½ oz.); almonds, 55 grams (1½ oz.); pine nuts, 70 grams (2½ oz.); and walnuts, 50 grams (1¾ oz.). I have added the approximate equivalents in avoirdupois weights. The average amount of protein was 62 grams, and the heat value 2,493 calories. The average coefficients of digestibility were high, "no more effort being required to digest the fruit and nuts than is required for milk and bread." Jaffa's observations were made at first on two women and four children, but a second series was made on one of the women, two of the children, two elderly men who had been vegetarians for years and had limited their diet almost exclusively to fruit and nuts, and two young men, university students, accustomed to ordinary diet. Our English "fruitarians" are by no means so exclusive in their diet. In the *Penny Guide to Fruitarian Diet and Cookery* the following is a sample of a day's ration:

Breakfast.—Porridge and honey or bread and milk, toast and butter with a little vyttale or olive oil, a dozen stewed raisins, an apple and a few nuts, a small cup of cocoa.

Dinner.—Potatoes and greens and butter with an occasional fried egg, a milk pudding or a little cheese and salad and oil, half a glass of water.

Tea.—A cup of cocoa, a slice of bread-and-butter, and a piece of currant cake or jam or fruit salad.

Supper.—Bread and milk or cold rice pudding with raisins, or bread and cheese with a glass of hot milk or oatenade (rolled oats simmered in milk and strained).

This is much modified "fruitarianism," but our climate is not favourable to the cult. While it is possible to construct a strict fruitarian dietary which fulfils all theoretical requirements, I know of no actual experience to show that it can be followed here without injury to health.

An advocate of another form of vegetarianism is Dr. H. Tissier, who was led to his present views by his study of the causes of infantile diarrhoea. He believes the cause of at least one form of this disease to be a specific organism, the *B. perfringens*, which gives characteristic frothy green stools. Its growth is inhibited by substituting vegetable for animal albumen in the food, so he replaces milk by solutions of sugar or starch. The effect is enhanced by administering at the same time one or two teaspoonfuls of a living culture of the *B. paralyticus* of Kosai. He holds that animal proteins favour the occurrence of intestinal putrefaction, with consequent formation of toxins. Therefore he abstains from meats of all kinds, milk, eggs, and cheese, but takes butter, bouillon, and meat extracts, with, in certain circumstances, a little grated cheese. He and another adult member of his family have lived on this diet for two years, and during this time have followed their usual occupations, and have taken regular daily exercise by walking and cycling, including, on one occasion, a cycle ride of 120 miles.

The amount of scientific support which vegetarianism has recently received is remarkable. There is scarcely a modern standard work on dietetics or metabolism which does not yield some part of the old ground, and such writers as Marcel Labbé in France, Umber and Otto Cohnheim in Germany, Chalmers Watson in England, and Chittenden in America, express more or less definitely opinions in favour of the need for restricting the consumption of animal food, and encouraging a greater use of vegetables, fruit, milk, and cheese.

In spite of the cheapness of imported meat, it is doubtful whether the food actually eaten by our workers is as good as it was two generations ago. Tea, bread, tinned meat, and jam form the chief elements of the diet of the unskilled labourer and his family. Ignorance and neglect

of the art of cooking render the women unable to take advantage of the abundance of cheap food, an exaggerated belief in the strengthening and sustaining properties of meat leads to a proportional want of appreciation of other kinds of food; the teapot is looked upon by the most temperate as a harmless source of stimulation; the craving for sweet things so natural to children is indulged too freely, while fats are overlooked; good dripping is relished by children, but there is no market for it among the poorest class, in spite of its cheapness—but this probably accounts for its unpopularity, for among the classes to which I refer food is appreciated very much in proportion to its supposed costliness, and despised if it is cheap. Hence the objection we often hear made by domestic servants, hospital patients, and soldiers in barracks to American beef or Australian mutton. Cods' heads, which contain so much nourishment, are not saleable in Birmingham, and are destroyed as offal!

For these reasons the labours of the National Food Enquiry Bureau to popularize oat-foods seem doomed to failure. The report shows that at present they are largely used in better-class homes (84 per cent.), but in the congested areas, where on economical grounds their introduction is so desirable, they are seldom seen (26 per cent.). The quicker cooking of rolled oats should facilitate their use, as the old-fashioned oatmeal required more time and care than the present-day labourer's wife would give to it, but it must be thoroughly boiled. There can be no doubt of the high nutritive value of oatmeal, and porridge should be the universal form of free breakfast which an unwise philanthropy provides for elementary school children at the cost of the ratepayer. It is taboed by the supporters of the "soft starchy food" theory of dental caries,⁹ and I fear this argument may be used by those who object to it because it is cheap.

REFERENCES.

¹ See BRITISH MEDICAL JOURNAL, June 4th, 1910, p. 1371. ² Ibid., May 6th, 1911, p. 1068. ³ Ibid., May 13th, 1911, p. 1151. ⁴ See Perfect Health and the Humours of Fasting, *Contemporary Review*, April and November, 1910. ⁵ *The No-breakfast Plan*, by T. Owen. ⁶ *Régimes alimentaires*. ⁷ *British Health Review*, December, 1909, and January, 1910. ⁸ *The New Hygiene*. ⁹ J. Sim Wallace, *The Child*, April, 1911.

CANCER, CREDULITY, AND QUACKERY.

By E. F. BASHFORD, M.D.,

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LABORATORY, IMPERIAL CANCER RESEARCH FUND.

In the course of the past eight or nine years a very large number of communications have been addressed to the Imperial Cancer Research Fund by persons claiming to possess a "cure," a "certain cure," "an infallible remedy," "an absolute cure," a "never fail cure," or "the only cure" for cancer. The first step towards investigating the value of these communications has invariably been to ask the senders to furnish a written statement divulging the exact nature or composition of the alleged remedy. When required, a guarantee that the information asked for would be regarded as confidential has been given. Further, a statement has also been demanded of the nature of the evidence on which the claims of cure were based, and of the reasons which led to the diagnosis of cancer being made. Many correspondents flatly refused to comply with these conditions, alleging in extenuation that they were unjust. In all such cases no exact conclusion as to the value of the alleged remedies is possible; but it can be inferred with considerable probability, from the nature of the information vouchsafed, that the claims made would not have been substantiated had opportunity been afforded for submitting them to adequate examination. It is surprising how many people are unconvinced that the scientific examination of such claims presupposes exact knowledge of the ingredients of the remedy. In the absence of this knowledge negative conclusions could always be ascribed to error, such as failure to recognize the presence, or to give due value to the potency of an alleged efficacious ingredient, in the event of an analysis having been made and particular ingredients investigated. Where claims have been made with a view to obtaining pecuniary reward—specific

sums as high as £10,000 and £80,000 have been mentioned by correspondents—there is all the greater need for the foregoing precautions in order to ensure the nature of a remedy becoming public property, in the event of a claim being substantiated.

In a large number of instances the claimants have complied with the preliminary conditions. The melancholy result of the experience gained by correspondence, interviews, and investigation is that, without exception, the claims so confidently made have been without any scientific justification, and a survey of the information vouchsafed reveals an astounding amount of credulity on the part of the public and of those engaged in the irregular practice of medicine as "cancer curers." What is much more serious is the evidence obtained that a few members of the medical profession screen, or countenance, the rankest forms of quackery. I have good reason for believing that to-day in London, and elsewhere throughout the country, members of the medical profession practising as "cancer curers" knowingly and deliberately trade upon the anxieties and credulity of the public in all that pertains to the etiology and the treatment of cancer. The number of quacks outside the profession also engaged as "cancer curers" cannot be estimated, but must be very much greater than the several hundred correspondents who were either sufficiently honest, impertinent, or naïve as to bring their proceedings to my notice.

Experience of the credulity of the public has also been acquired in various other ways—for example, through the nature of the many suggestions offered in all honesty as to the nature of the disease, and often more emphatically when patients or their friends and relatives have, against my wish, sought, and on occasion obtained, interviews. Sometimes I have been approached under the influence of the idea that I had something up my sleeve, something which, though still in the experimental stage, might be tried if only in the way of a forlorn hope. Time and time again the story told has run on the familiar lines—a history of early neglect of the advice of the surgeon, inoperable cancer, resort to quacks, and, finally, appeal to myself. To be obliged to listen to the history of such cases is most distressing to all physicians and surgeons, and not less so to the laboratory worker whose duty it becomes to point out that it would be criminal to apply to man any of the methods hitherto found efficacious in preventing or modifying the growth of *transplanted* cancer in animals.

The following two narratives are quoted from a lecture delivered by Sir Spencer Wells in 1857. They depict a state of affairs still obtaining after sixty-five years. Sir Spencer Wells said:

I may as well, therefore, give you one or two instances of the sort of cases you may meet with in private. In the year 1853 I was sent for to see a gentleman well known in the higher ranks of London society. He had a malignant tumour beneath the angle of the left jaw, and his case is so excellent an example of the way in which people with cancer run about, first among the surgeons and then to the cancer curers, that I will relate it at some length. This gentleman first complained of a sore in

the inside of the left cheek. He fancied he had bitten it. Then it was thought that a decayed tooth had caused it, and the tooth was extracted. Then caustic was used. Still it did not get well, and Mr. Fergusson was consulted. He excised the diseased part; a good deal of bleeding followed, and styptics were used freely. Some time after swelling came on beneath the jaw, and Mr. Lawrence was consulted. He said the disease was malignant, advised attention to the general health, and a course of sarsaparilla. Then I was called in. The skin at that time was on the point of giving way. I employed congelation by Dr. Arnott's process. This did some temporary good. It gave relief to pain, and I felt pretty sure that it retarded the growth of the tumour. However, the patient was not content with that, and Dr. Marsden was sent for. He advised a very generous diet. Soon after this the skin gave way, and carrot poultices were used. Then came the turn of the cancer curers. Dr. Pattison was sent for, and had sense enough to see that he could do nothing, but made the most of the case, of course, by saying that if he had been called in at first he should certainly have effected a cure. Then a German empiric was heard of who was doing wonders somewhere on the Rhine, and he was written to. He offered to come over for five hundred pounds, and ultimately an arrangement was made to give him three hundred. He came, saw, and conquered—not the disease, but the patient. He applied a very strong caustic one Monday; on the Tuesday it had destroyed the coats of a large artery, which gave way, and the patient bled to death in a very few minutes.

Every one who has seen much practice in town could tell such stories as these, but one I have heard Dr. Jenner relate is most striking. He was called one morning, seven or eight years ago, to see a lady who was said to have fainted. He found a lady dead in bed, and a cancer curer just about to reapply a dressing upon the breast of the dead woman. This person was so ignorant of medicine that he did not know she was dead; he was horror-struck when Dr. Jenner told him so, and had just before assured the husband that his wife was going on well, and would soon be cured. The quack was not punished. The husband and friends were ashamed of having been duped, and they kept quiet.

I have found it interesting to consider what may be the grounds of the frequency with which quacks are relied upon by the public to treat cancer. A survey of the different aspects of this most important subject reveals quite a number of probable reasons in addition to the natural dread of the knife, and the quite unwarranted belief that cancer is a loathsome disease to be ashamed of. I shall pass

some of these reasons in review.

EXPLOITATION OF THE UNIVERSAL FAMILIARITY WITH "CANCER."

The first opportunity for the quack is found in the familiarity of all classes of people with the terms "cancer" and "canker." "Cancer," as a scare headline possesses more power to arrest attention than any other in the vocabulary of medicine. In its two syllables it spells something dreadful, and with an alliterative emphasis in its variant "canker." Although it is merely a vague term, whether objectively used of human ailments or metaphorically applied to human actions, yet it is very definitely damnatory. "... And is't not to be damn'd, To let this canker of our nature come in farther evil? ..." In sharp contrast with the uncertainties inseparable from the use of the term "cancer" in vernacular language is the hard and fast rule for its treatment—namely, early and complete surgical removal. The public are as familiar with this rule as they are with "cancer," and the absence

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TESTIMONIALS.

I hereby certify, that Dr. PORT has extracted two Cancers one from each of my breasts, within the last two years, and I am quite well and free from pain.

WITNESSES
(MARTHA EDWARDS,
MARGARET JONES,
ANDREW HALL,
MARY HALL.)

ELIZABETH DOYLE,
Bridge End, Birkenhead.

Aug. 28rd, 1855.

The above named person is now living in the same place hearty and well.

E. J. PORT.

Nov. 5th, 1867.

Miss HUBBERTSEY, of Clayton Green, near Chorley, was cured of a Cancer in the breast, in June, 1848, and remains free from pain or any other ill effect.

Miss RADLEY, of Bidston Mill, near Birkenhead, was cured of a Cancer in the upper part of the left arm, in February, 1849, she having been cut three years previously.

of an alternative treatment of any proved value leaves the door open to every form of quackery.

Cancer was at one time a term used as vaguely in the language of science as in popular parlance. To-day a vagueness remains, but it is of a different kind, after some fifty and more years of endeavour to impose strict limitations to the employment of the word in scientific language. Nevertheless, and indeed in spite of the progress of exact knowledge, familiar usage has held its own; in the vocabulary of everyday life no substitute has been found for it. In French and in English "cancer," as "Krebs" in German, is used by the public at large with reference to disease, and is understood by it to cover all sorts of malignant new growths, and much else besides, far too frequently to permit of the pathologist ever assigning to "cancer" the part of a mere technical term designating one group of malignant new growths. How little progress the medical profession even has made towards discarding it in favour of newer and unambiguous terms is shown by the reports of the Registrar-General.

The deaths ascribed to malignant new growths during 1909 numbered 34,053, of which 19,513 were referred to carcinoma, 1,974 to sarcoma, and 12,566 less definitely to "cancer," not otherwise defined. The latter number remains about stationary year by year, but the deaths ascribed to carcinoma are rapidly increasing.

If yet another demonstration is wanted of the futility of attempting to rob ordinary language of "cancer," it is to be found in the titles chosen by universal consent of the lay and scientific public of all countries, for those of individuals, institutions, laboratories, and organizations engaged in "cancer research," "étude du cancer," or "Krebsforschung"; whatever the equivalent terms may be in other languages they are equally popular, far-reaching and equivocal. It is generally recognized that the investigation of cancer cannot be restricted to carcinoma, and in studying the disease it is not thus restricted.

Just as all the world over a two-syllable euphonious title is preferred for an hotel, since a name of more syllables places a hostelry at a disadvantage, so such phrases as "malignant new growths" have been at a disadvantage in competing with "cancer" and unable to oust it. Even in scientific language many substitutes for it have been suggested—neoplasm, autochthonous blastoma—without success. The substitutes suggested for use in scientific language have been too often coloured through being formulated in terms of some explanatory hypothesis, and for this reason alone could not count on general acceptance. I believe it is better to resign oneself to the tenacity with which the layman adheres to his right to the word instead of trying to dispense with "cancer" altogether, acknowledging at the same time that the progress of knowledge has greatly altered its scientific connotation in the course of ages, and is still doing so, and conceding also that the disadvantages of employing it at all attach equally to every substitute suggested in the present imperfect state of knowledge. The opportunities for the quack are great for this reason alone, that all are familiar with the term, all dread the disease, no man comprehends it, and the quack seizes every opportunity

to exploit uncertainty, ignorance, fear, and credulity, when honest men offer no alternative to the knife.

EXPLOITATION OF ABSENCE OF RELATION BETWEEN STRUCTURE AND MALIGNANCY.

"Cancer" till late in the last century had a clinical significance only. Its use implied no knowledge of the histology and accurate pathological anatomy of malignant new growths. Cancer covered a multitude of signs of disease to which it is no longer applied either by the medical profession or by educated laymen. Among uneducated people "cancer" still is used to cover many syphilitic sores as well as others of an entirely different nature. To-day, notwithstanding its reputed indefiniteness, it conveys to all educated people who use or hear it a sufficiently clear conception of a group or groups of insidious diseases of the nature of swellings and ulcers which all fear, and which many are ashamed even to acknowledge have occurred in relatives.

The introduction and advances resulting from the study of the microscopical structure of healthy and diseased tissues first permitted of the term "cancer" being applied on the basis of exact anatomical knowledge both as to the structure and the relationships of the primary tumour and its offshoots or metastases. Synchronously with this great increase in knowledge, cancer became a synonym for carcinoma; among scientists it denoted a malignant new growth of epithelial origin as contrasted with sarcoma—that is, a new growth of connective tissue origin. The progress of anatomical, histological, and embryological knowledge led to the recognition of a large number of other tissue formations, and the number of "omas" became as numerous as the tumours of different organs or tissues. So goodly a number of them more or less accurately distinguish one form or type of malignant new growths from others, that, as Adams remarks in another connexion, to classify them would be to construct a Chinese alphabet. Thus, in the course of the last thirty-five years of the nineteenth century a large number of new terms

were coined to give exact expression to what the microscope revealed to the pathologist; but both the patient and the clinician still wanted only a straight answer to the question, Is the growth or ulcer benign or is it malignant?

Thus the second opportunity of the quacks is provided by the fact that, great as were the advances mirrored in exactly naming new growths according to their tissue of origin and minute structure, those advances were unaccompanied by a corresponding preciseness in clinical conceptions of what constituted the symptomatology of cancers, and of what were the criteria of the degrees of malignancy. Attempts were made to deduce the clinical course from the histological structure, and to make the huge list of subdivisions the histologist had introduced conform to, or at least incline in favour of, one or other of the two simple categories—benign and malignant. Both the surgeon and the pathologist soon became aware that the relation between structure and clinical course was not always so straightforward. Therefore, in putting this simple clinical classification into practice, it was modified.

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according to the site of the primary growth, cognizance being also taken of the degree of vascularity, amount of movement, and other conditions which were early recognized as influencing the local spread of new growths and the early or late appearance of metastases, as illustrated, for example, by the contrast in the advance and dissemination of squamous-cell carcinoma of the tongue and larynx. But even under such limitations surgeons and pathologists became familiar with the contradictory behaviour of malignant new growths which were reasonably supposed to be identical, more especially when they occurred in similar sites. With all their apparent identity in structure and sites, it was only too evident that malignant new growths presented variations in malignancy, and that with uniform care in operation uniform results could not always be ensured. To modify the surgical procedure, in the sense of restricting its extent or delaying it, in accordance with histological indications, was frequently to court disaster, except in the case of certain growths of very well-defined nature, and then only of particular organs. All these difficulties in the way of adapting surgical treatment to diagnosis are present at the time most favourable for operation. They remain, sometimes even in enhanced degree, after the earlier stages of hopelessly inoperable cancer, or of a condition simulating it, is reached. At this advanced stage, weighing the possible advantages against the certain risks of surgical interference, should the disease be cancer, leads more often than not to the patient or the surgeon refusing to take a step apparently so unavailing either to relieve suffering or to prolong life. In early and operable cases the only rational treatment is to treat as if for the worst. The absence of any alternative of itself, in spite of the uncertainties of diagnosis and prognosis, gives the opportunity for the reasonable anxieties of the patient being exploited by quacks whose procedure is exactly the reverse, and who treat as if it were for the best, and chance it. In all the statements, pamphlets, and books I have read by persons claiming to treat cancer by other than surgical methods, much capital is made out of the opinions of surgeons as to the diagnosis of the growths treated and "cured." The inoperable cases "cured" by the quack would not be so frequent if surgeons were not honest.

EXPLOITATION OF THE VIEW THAT CANCER IS OF CONSTITUTIONAL ORIGIN.

The handicap under which surgery labours in applying the only rational treatment is already great under each of the foregoing heads; but it is small in comparison with that imposed by the unscrupulous exploitation of the part that bodily constitution can be alleged to play in the development and progress of cancer. It is an old question whether cancer is constitutional or strictly circumscribed and local in its origin, and although from the standpoint of surgical treatment the adequacy of the demonstration of the circumscribed origin of cancer, as described below, can no longer be disputed on reasonable grounds, nevertheless charlatanism and credulity find more common ground on which to combat common sense, and to undermine the just claims of surgery by opposing this conclusion, and by

describing cancer as a constitutional disease, than they do in any other fallacy. Even the most ignorant conceive that they have got a "constitution" which they can be brought to understand they have abused by some form of self-indulgence; and is not many an ailment quite satisfactorily explained without reflecting on the patient's own mode of living by saying it is constitutional, or in the blood?

Consider the various effects of a contaminated blood stream upon the epithelial cell, the culminating point of the pollution resulting in cancer.

It is of no more avail to excise the local manifestation of blood contamination—which cancer undoubtedly is—and thus expect to eradicate the constitutional affection, than to cut out a piece of dry rot in a beam without adopting means to remove the cause of the mischief.

Back up this assertion by bringing in "furuncles or boils," "carbuncles," "eczema," "certain squamous diseases of the skin," "psoriasis," "scurvy," and is not the mystery of cancer at once comprehensible to the credulous? Will

not the timid dread the knife sufficiently without melodramatic assertions of the details of ruthless mutilation, and of woman's chaste desire not to sacrifice her breast? It might be supposed that the quotations were made from a printed slip like those reproduced in the figures; but this is not the case. I have selected them as being written, I assume in all seriousness, by a member of the medical profession. They are taken from a chapter entitled "The Evolution of the Cancer Cell" in a booklet by Dr. Robert Bell, and are avowedly intended to divert the cancer sufferer from the assistance of surgery as "interfering fatally with the therapeutic measures which otherwise might have proved efficacious." I am not at present concerned with Dr. Bell's "therapeutic, dietetic, and hygienic measures," which "have a much larger proportion of cures to their credit than surgery has ever been able to obtain," but only with the kind of physiology and pathology that is to-day employed to create a make-believe in the constitutional nature of cancer. The pages from which I quote contain a jumble of words—irrelevant chatter, as it seems to me—in which milk, nuclein, the thyroid gland, pork, butcher's meat, constipation, menstruation, cell metabolism, platform experience, and contaminated blood, jostle one another without order or reason; with the throwing-in of a biblical quotation and repeated dwelling upon the natural dread of the knife, an appeal to all human frailties is completed. In this way old fallacies about cancer being a "blood disease" are kept alive among many members of the public, as is also the nonsense of its having anything to do "with certain squamous diseases of the skin"—to quote Dr. Bell again—except rodent ulcer and squamous-cell carcinoma. Such books as that of Dr. Robert Bell appeal especially to those fearing lest they be victims of cancer, and can hardly be expected to serve for the enlightenment of the medical profession.

However unreasonable and foolish it is to-day to describe cancer in general terms as a "constitutional disease," a "blood disease," or a "skin disease," it was not always so, and, if such views are no longer entertained by those familiar with the scientific details, they still slumber on in the minds of the world at large, and account for the ready response accorded to appeals to ignorance and

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THE QUACK DOCTOR.
After Gerhard Douw.

prejudice in the matter of treating cancer, all the more so because there are certain features in the origin, growth, and dissemination of cancer, to explain which even to-day we have to assume a certain kind of predisposition of the individual or of organs. Indeed, the existence of predisposition of a sharply defined nature has been demonstrated to play a part in determining certain features in the natural history of the disease. This predisposition has, however, no kind of semblance to the older views of cancer as a constitutional disease nor to the rhodomontade about cancer as a blood disease. Black bile, humours, expulsion of explosive stuffs, exudation of diseased products, sterility, suppression of menses, over-nourishment, adiposity, age, lime, consumption of pork, of meat, of vegetables, of fruit, or of salt, and temperament, worry, suppression of perspiration, heredity in the vaguest senses, rheumatism, acidity of the blood, etc., have all played a part in the serious discussion of cancer as a constitutional disease. That the advance of knowledge has led to some of them being discarded altogether and has given to others a different and precise significance does not imply that the older erroneous conceptions have been banished from popular memory also, nor that the quack does not have much latent credulity to work upon. Some of the suggestions made to me as to the etiology of cancer demonstrate the survival of much ancient lore about the disease. These views, even if they appear quite absurd to-day, were not therefore of necessity brought to my notice by uneducated people, nor does it follow that they would be disavowed by all educated persons were I to recount them here.

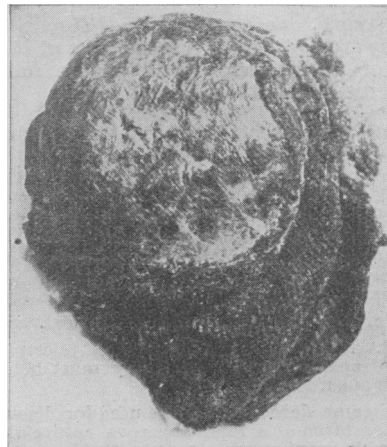
EXPLOITATION OF THE DIFFICULTIES OF DIAGNOSIS.

From what has been said above it may be apparent how great are the difficulties in the way of the surgical treatment of cancer, even after its rational nature and its success have been established to the point of absolute demonstration by experiments conducted on animals. It may also be equally plain how correspondingly great are the advantages under which the cancer curer urges his counter-claims on the credulous public, and how often he profits by the opportunities sent his way whenever surgeons refuse to advise any treatment of a suspicious growth short of that which would have been necessary in the case of cancer. Data collected from hospitals show, as was to be expected, a considerable amount of over-diagnosis, represented by 757 cases wrongly diagnosed and treated as cancer during 1904-9, even under the most favourable conditions for clinical examination. Of cases easily accessible to complete physical examination, 7 per cent. were thus wrongly diagnosed, in intermediate sites the percentage was 9.3, and in sites inaccessible to complete physical examination 10.8. There is not the least doubt that these diagnoses were made and surgical treatment adopted in the best interests of the patients, nor is there any doubt, since the cases passed under the observation of many competent men, both before and after entering hospital, that they very closely simulated the clinical picture of cancer. In other circumstances the difficulty of distinguishing will not be less, but probably greater. Not by any means are all such cases operated upon and the truth ascertained by subsequent pathological examination; thus is provided an annual crop of cases of *reputed cancer* more than adequate to account for all the "cures" claimed by all the quacks and cancer curers on the basis of the diagnoses of "inoperable cancer" by eminent surgeons or by hospital authorities. Examples of the exploitation of the uncertainty of diagnosis might easily be instanced to illustrate that there is this further important point to be noted—namely, the cases of over-diagnosis quoted above have been ascertained from the surgeons and hospital authorities themselves, who candidly admit them and recognize that they are at present unavoidable in the absence of unequivocal diagnostic methods.* I have yet to learn of a single error in the diagnosis of cancer admitted on the part of a "quack" or "cancer curer." They claim an infallibility equal to that claimed for their nostrums, and compatible with the ignorance and assurance they proclaim in their accounts of the histogenesis and pathogenesis of cancer.

*The search for these has given rise to a crop of unreliable criteria, "tryptic" and "antitryptic" indices, "anaphylactic" and other reactions.

THE QUACK'S ARMAMENTARY.

Judging from the evidence before me, the means employed to treat by other than surgical methods everything that is understood as "cancer" in the vernacular, differ in principle to-day very little from those employed by the cancer curers of old. Caustics, herbs, ointments, plasters, pills, poultices, vegetable remedies, Chian turpentine,



Cancer plaster. After removal (!) of the cancer the so-called roots are on the other side.

frier's balsam, magnetism, and mesmerism still figure in the list, to which additions have been made by way of turning to account and travestying the importance of dietetic, and whatever may still be or have been reasonable in the legitimate employment of electricity, ferments, high frequency currents, electric light, sunlight, coloured light, radio-active baths, radio-active drinking water, and organotherapy.

A. Part Played by Religion and Superstition.

Cures on a religious or quack-religious basis are put forward to-day as of old. The address of a Roman Catholic priest who possesses a cure was communicated in all seriousness, no details being given, scriptural analogies alone supplying the evidence in substantiation. Another correspondent writes:

I say now as an incentive that I believe the Almighty has revealed to me a cure; the only stipulation I make is that the medicine shall be given a fair trial in a case of cirrhosis of the liver.

Yet another writes:

Jews never suffer from cancer; therefore bleed a cancer patient to the limit of safety and pump into him the blood of three or more healthy young Jews fed according to their law. The blood would repel and kill the cancer germ.

These are but illustrations. There is a Scotch minister who was much before the public a few years ago with marvellous tales of his curative powers, possessed, perhaps, on a similar basis to those of another quack, who writes, "Possibly I may have more heat or electricity in my system than most men." In other communications the religious or superstitious element takes the form of a survival of the belief that somewhere in the world a plant has been hidden which it is our duty to seek.

"The merciful Creator provided in non-poisonous herbs a remedy for every disease the flesh is heir to," is the appeal a herbalist quack makes to those of this way of thinking, and to those who uphold the doctrine that "no herb is poisonous, but many weeds are."

Superstitious beliefs also manifest themselves in faith in old prescriptions that have been handed down as family heirlooms.

The treatment was medicine from an old prescription handed down in my family from as far back as 1700—and was given me by my father. He told me that no one had been treated by the prescription for sixty years or more.

Such old prescriptions are apt to be employed in the present generation in a way not originally intended—for example:

I have a receipt which has been in my husband's family for three generations for curing cancer in horses, and I have been offered £100 for it by Veterinary Surgeons. My treatment is very similar to vaccination. My husband died 5 years ago, leaving me the receipt, and I thought myself, if it was good for horses it would be good for human beings.

Thus are invented the tales relied upon by hereditary families of medical botanists, herbalists, and dentists, or such legends as that of a "gifted family of blacksmiths" with natural powers of healing, to whom my attention was seriously directed by a clergyman in the hope that the secret which died with the last member of the race might be ascertained. Other correspondents, in the course of the perusal of old volumes, unearth and revive old prescriptions, for example, one from the *Scots Magazine* of 1751; or again they are kept alive, as in the case of burdock root, by means of printed slips such as the following one, supplied by the Prioress of a Nunnery.

Remedy for Cancer & other diseases, arising from a bad state of the blood.

The root of the Burdock (*Arctium Lappa*) with large leaves. The flowers resemble those of Thistles.

Take a middle sized root, boil it in a pint & three quarters of water until reduced one 3d. add a little Aloes about the size of a small nut.

Dose. A wine-glassful before each meal.

N.B. If the invalid is not able to take plenty of nourishment, the remedy must be discontinued.

The same decoction may be used for diseases of the blood of a less dangerous nature than Cancer, but then the aloes is not added.

The plant should be gathered in Autumn, when the sap has descended to the root.

The leaves and stalks pounded to pulp, and applied to cancerous or other sores, will heal them, as also the juice used as a wash.

Exact weight of ingredients for each infusion. Burdock 1 dram 15 grains. Aloes 7 grains.

Time it usually takes to effect a cure.

Cancer in the Tongue. 6 months.

do. — in the Stomach. 18 months.

do. — in the Breast. 2 years.

do. — in the Bowels. 3 years.

N.B. —

The Patient must take plenty of nourishment while using this Remedy.

B. Herbal Remedies.

Belief in the virtue of a plant is frequently shown. It may arise in an assertion that it cured the claimant who possesses a "cure," plus a hint at cures in other persons; or it may be more grotesque, so "that there might possibly be a cure for this disease in the American aloes plant, it being similar in appearance to an inverted cancer." What an "inverted cancer" may be like is not stated. More frequently the origin of the belief cannot be traced—for example, a decoction of red clover tops has been recommended from New Zealand; from Ireland, where it is stated they are included in an old Irish prescription; and from Wales. Red clover tops also appear in the statements of herbalist quacks. Decoction of mistletoe is recommended by one who applies locally potato poultices because "I claim that the cancer has life and feeds on the flesh, and given an opportunity it will feed on the potato until it dies." Violet leaf plasters still do duty, sarsaparilla, sorrel, hemlock, charred dandelion root, *Rumex alpinus*, etc., occur. Of plantain leaf it is written, "The drawing power of that leaf is simply marvellous." "I have used it myself for irritation and redness of the nose. It has the same colour as the plasters used twenty-five years ago for cancer." Condurango is suggested because "used by the Indians of Ecuador for curing cancer." Similar stories are told of the natives of Australia and South Africa in regard to other plants. Of vegetable caustics, ipecacuanha, croton oil, pokeweed are recommended, and the juice of *Euphorbia drummondii* is stated to be "used by the blacks of Queensland to cure venereal disease and to cure cancer in cattle"; for when "injected three times a day at intervals of four weeks, it is efficacious among blacks as a cure for cancer." Bottles of juice and packages of vegetable ointments of unascertainable composition have often been offered for pecuniary reward—"The remedy is

Nature's own, and the herb is fairly plentiful. I will send a bottle of the juice and a tin of ointment for external application. A medical man wants to buy it; says it is worth £1,000"—is a sample application. A miscellaneous collection of records of the virtues of fruit and vegetable juices, including capsicum, turpentine, friar's balsam, Chian turpentine, onions, and molasses completes the extracts from the list of plant remedies not re-enforced by the addition of other ingredients—for example, mineral caustics.

The history of how molasses came to be a cure for cancer is instructive. Some years ago there was a great to-do in the newspapers about the virtue of molasses as a cure for cancer, and the claims made were inquired into in London and elsewhere. All the pother arose in the following manner: The manager at a sugar refinery in McKay, Queensland, heard in 1902 a tale, from a man who dropped into his office, about the wonderful effect molasses had upon a supposed case of cancer. After the raconteur had gone "I began to circulate what I had heard, and one of our men being very bad with large corns on the sole of his feet, got relief on the second application." Molasses thereupon blossomed forth not only as a cancer cure, but as a "cure also for many other complaints, such as shortness of breathing, corns, constipation," etc. Its virtues had increased so greatly in a few years that the newspapers were full of the marvellous properties of the "McKay Cure for Cancer," and rival claimants put in applications for the high reward expected by whomsoever could establish his claim to be the true proprietor.

C. Mineral Caustics.

Vegetable products are, however, most frequently employed to conceal more active ingredients. Many so-called pure herbal remedies employed as plasters, poultices, and ointments, contain other active ingredients—for example, "sorrel plus chloride of potash or lye" gives a strongly alkaline caustic solution, owing none of its action to the sorrel, although the result is described thus: "The sorrel will cook the cancer, but does not eat it as it does the flesh, hence it eats all the flesh away and lets the cancer loose." The same remark applies to the "bark of red oak burnt to ashes, and applied to the cancer till it is eaten out."

Arsenic, the chloride and the sulphate of zinc, tartar emetic, corrosive sublimate, and other dangerous caustics apparently form the chief standbys of the cancer curer of to-day in his claims to cure cancer without the knife.

I have in my possession a process for making an ointment which has cured cancers for many years and has never failed, causing the largest spider cancers to be taken out with all their tentacles, killing and curing the cancer germs and healing the parts not only without injury, but to the great relief of and health of the patient.

So runs the statement of one of these gentry, while that of another reads:

I own a tried and sure cure in the form of an external application. . . . The most malignant spreading cancers are immediately arrested and killed root and branch by this cure, its power reaching out to the hair-like tentacles in a most wonderful manner, leaving nothing of cancerous life in the flesh.

In these cases, although offered for sale, the nature of the remedy was not disclosed, and it is by inference that arsenic is suspected to have been the only active ingredient.

In many instances, however, correspondents have been perfectly frank and honest, and the nature of the remedy has been revealed—for example, by a correspondent who, after disclosing in confidence the nature of the plaster employed, describes his procedure thus:

I spread the ingredients on a piece of skin the size required by the plaster, a fresh plaster being applied every 8 days. It generally occupies two months before the skin and flesh crack around the growth, the ingredients all the time killing it. I generally find the cancer hangs loosely for about one month—during which time I have to apply sticking plaster supports to prevent the roots of cancer breaking instead of being gradually withdrawn. When the growth has been extracted I heal the wound with ointment and lotion.

The employment of arsenic is often frankly acknowledged, as in the following: "I use arsenic just as a tiny speck." Even to-day the use of arsenic is cloaked with mystery. A man who claimed to have cured himself by means of arsenic stated that "the cure was supposed to

be derived from an old Welsh woman"; another writes: "It has been a profound secret in my family for two generations, of which I am the sole proprietor, so far as I know." It is the chief ingredient in a "recipe found by an old lady":

1. Powdered dried liverwort.
White arsenic.
Common turpentine.
White wine vinegar.
Plaster.
2. Dietary regulations.

Arsenic is also a "traditional Irish remedy," and the urgency with which my attention was called to it required in one case the emphasis conveyed by the accompaniment of a solicitor's letter. In the information collected by the Imperial Cancer Research Fund arsenic occurs more frequently than any other caustic.

Lead occurs as ordinary plaster or in such a combination as:

1. Myrrh.
2. Armenian bole.
3. Red lead.

Mercury occurs thus:

| | | | | |
|------------------|-----|-----|-----|-------|
| <i>Internal.</i> | | | | |
| Sulphur... | ... | ... | ... | 2 oz. |
| Quicksilver | ... | ... | ... | ½ oz. |
| Cream of tartar | ... | ... | ... | 1 oz. |
| Saltpetre | ... | ... | ... | ½ oz. |

Put in a pint of treacle. One tablespoonful before going to bed.

| | | | | |
|------------------|-----|-----|-----|-----------|
| <i>External.</i> | | | | |
| British oil | ... | ... | ... | 1 bottle. |
| Red precipitate | ... | ... | ... | 1 oz. |

Sulphate of zinc occurs thus:

Mix equal parts of white vitriol and charcoal into a paste and apply to the cancer, and when the cancer turns the colour of a mouse it will become shaky and can easily be pulled out by the roots.

And thus:

This remedy is used by a noted physician with great success, but as he charges each patient several hundred dollars, the worthy poor are prevented from availing themselves of his assistance. Procure a thin piece of soft leather (chamois skin will do), larger than the surface of the cancer. From the centre of it cut a piece as large as the surface of the cancer and spread on to it a plaster composed as follows: Sulphate of zinc, two ounces; pulverized blood root, two ounces; powdered sulphur, two ounces. Thoroughly mix these ingredients with two or three ounces of dry wheat flour, then add water and make all into a thick paste. Spread this on the piece of leather you cut out. Next fasten the large piece of leather around the cancer so that only the sore is exposed. Then bind on to the sore the smaller piece, with the paste next to the flesh, and leave it there for 24 hours. Then remove it, and apply a warm poultice of flax-seed, keeping it on for sixteen hours. After removing the poultice use forceps and gently move the cancer about until it can be extracted with ease. Be sure to take out all the roots. Then poultice again every twelve hours until it has healed. The ingredients may be obtained from any drug store. The drawing of the poultice is sometimes quite painful, therefore the patient should be watched to see that the poultice is not taken off. Before using this treatment the patient must fast for two days, and then diet very carefully, eating no meat, but plenty of fruit for two weeks to get the blood in good condition. Cancer is due to a morbid condition of the blood. Therefore, to prevent its return, the patient must in future live according to the hygienic laws of health. Remember that extracting the cancer does not remove the cause, and that a permanent cure depends upon the way hygienic methods of living are employed by the patient after the cancer had been extracted.

Zinc chloride is also a common ingredient, and together with antimony and arsenic forms the bases of the "Dutch Cure" of which there are a great many varieties in use in South Africa. Needless to add, those who practise the old familiar treatment of cancer by arsenic or other caustics also accompany this procedure by the old tricks in the way of a warning, "Before saying anything further

I must tell you that this cure will have no effect on cancer which has already been operated on"; or dietary regulations are enjoined—for example, whilst a plaster is being applied every twenty-four hours "patients must on no account eat pork, bacon, jam, puddings, pumpkin, beef, or new bread." Another sample of dietary regimen is cited above with reference to zinc sulphate.

Egg and salt are employed mixed to form a plaster to be applied where pain is seated.

It is a terribly stringent method, and causes great agony. For the patient to stand it he must be well nourished, for it must be applied for 23 days, when at the end the cancer bursts through the skin in its entirety.

Egg and salt are also "used in Brandy," notwithstanding that Falstaff swore "I'll have no pullet's sperm in my drink," and in spite of the notion expressed by a correspondent who suggests that the frequency of cancer is due to the consumption of uncooked eggs. Kelling in Germany seriously endeavours to show that cancer is derived from uncooked animal cells surviving digestion, but he would appear to have been anticipated long since.

Other means of obtaining ulceration are the employment of strong permanganate of potash, iodine, brimstone in various combinations, and iron filings, of which a "Bush Doctor" in Tasmania writes: "Iron filings give hard cancer Hell." This same person cures cancer of the tongue by soaking it with a strong solution of copper sulphate for ten hours!

The treatment of cancer by the external application, through ignorant quacks, of arsenic and the other caustics above mentioned is a survival of methods in vogue among the medical profession in days gone by, when knowledge of cancer was limited to mediæval dogma. This method was not quite abandoned till the era of anaesthetics and antiseptics revolutionized surgery, and till the advance of anatomical and histological knowledge laid clear both the histogenesis of malignant new growths and their origin in a circumscribed area. Of the modern aspects of resort to the treatment of cancer by other caustics I shall have something to add later.

D. Proprietary Patent Medicines.

A large business is apparently done in the sale of proprietary patent cures for cancer, such as "Parifico," stated to be a "positive remedy for Cancer, tumor, scrofula, erysipelas and all Humors," and such as "Bramarsandt," and "Mannina Ointment," and "Aniska"; the latter is stated to be a remedy for "skin disease." The "Magalia Remedy Company" wrote claiming "the King Edward £10,000 bonus" for the cure of cancer, this remedy being an "improved germ destroyer." The "Radixia Cure" and the "Rockonian System of Treatment," the "Guelph Sterilization Cure," and, among others, "Vitadatio" have also come to my notice. "Vitadatio" is stated to be a vegetable tonic; a person, presumably the proprietor of "Vitadatio," wishing to establish its claims to cure cancer, called one day with a black bag containing what he stated were the proofs that he had cured cancer. He produced some bottles containing what he declared were cancers ex-

pelled from the body—the first was a portion of placenta, the second some ecchinococcus cysts, the third a hard scybalous mass, the fourth a portion of a fetus. Our interest being now greatly aroused, my colleague (Dr. J. A. Murray) and myself were unfortunate in not being allowed to examine the remainder of this instructive collection. Its possessor suddenly departed, and nothing more was heard of him till lately, when a gentleman called upon me to inquire whether he would be justified in allowing his mother, who was dying from cancer of the uterus, to place herself in his hands. The poor woman had learnt of "Vitadatio" from reading an advertisement in a weekly journal.

America would appear to be the home of a large number of cancer quacks, many of whom claim to be members of the medical profession. They are able to sell their nostrums in this country, and they must have some means

DR. E. E. BURNSIDE'S

Purifico

Numbers 1, 2 and 3.

THE GREATEST KNOWN REMEDY FOR CANCERS, TUMORS
SCROFULA, ULCERS, ERYSIPELAS, SALT RHEUM
AND ALL HUMORS.

—PREPARED BY—

The Purifico Mfg. Co., - -

This hails from America.

Magic, Sorcery, the Black Art, Witchcraft, Mesmerism, Electro-Biology, Animal Magnetism, etc., are all edifices erected on the fundamental principle—that the human organism is a powerful radio-active body, emitting rays which can be felt of about one-third of mankind. The curative property of this radio-activity has been demonstrated over and over again in a manner which leaves no doubt in the mind of the impartial investigator that this is the scientific method of curing disease. Dr. Ashburner wrote in 1851, in the preface to his translation of *Reichenbach's Researches*, it has conquered malignant cancer. It has removed enormous growths known as polypus as I can testify. I know that it has chased away large ovarian tumours and dropsies that defied all medical skill, etc. . . . When the nature of nerve energy as a force

akin to Electricity is understood, the explanation is very simple. An exalted state of feeling or belief acts upon the nerve energy in the organism by raising the Potential and increasing the Density. . . . The rise of the Potential in Nerve Energy is the Scientific explanation of the wonderful cures wrought through Faith-healing in all lands and ages. The Vrilya Club will thoroughly explain, as the manifestation of "Vril," all the cures that have been and will be performed.

No wonder Mr. Lovell is "much interested in the question of cancer research," and convinced that, "in dealing with this method the chief difficulty has always been to secure sufficiently powerful operators," and therefore that Mr. Lovell "inured himself to pluck, reality, self-esteem, definiteness, elevatedness," before he vouchsafed to offer to cure cancer. Thus even the latest ideas due to advances in physical science are demonstrated to be perverted by credulity and quackery for the deliberate exploitation of human suffering. This is done more concretely when an attempt is made to impose upon the public by proclaiming the radio-active and cancer-curing properties of "Isham Water." From personal experience I hazard the opinion that various alleged radio-active patent preparations will be found on careful examination to be innocent alike of radium or of having ever been exposed to the influence of its rays.

RESORT TO CAUSTICS AND EMPIRICISM BY MEDICAL MEN AND HOSPITALS.

A much more difficult matter is to define exactly what position should be assigned to persons holding medical qualifications who assert that cancer is curable by therapeutic measures, and that surgery is not a rational treatment for the disease, but, on the contrary, the actual means of inducing or aggravating it. Still these persons come into this survey because they have thrust their views and their methods under my observation. When they have published statements on the nature and pathology of cancer, such as those I have already quoted from Dr. Robert Bell, it is possible to appraise the level of their scientific attainments. Dr. Robert Bell writes:

It is of no more avail to excoise the local manifestation of blood contamination—which cancer undoubtedly is—and thus expect to eradicate the constitution, than to cut out a piece of dry rot in a beam without adopting means to remove the cause of mischief;

and elsewhere:

Consider the various effects of a contaminated blood stream upon the epithelial cell, the culminating point of the pollution resulting in cancer.

It might be inferred from these quotations that Dr. Bell is merely opposed, and it might not necessarily be erroneously so, to accumulated pathological experience and current surgical teaching and practice, were it not for the overwhelming evidence that Dr. Bell, formerly of Glasgow, is the modern representative in London of some of the practitioners referred to in the extracts I quoted from Sir Spencer Wells at the beginning of this article. Of formic acid Dr. Bell writes:

Did not Solomon say, "Go to the ant, thou sluggard; consider her ways and be wise"? He might have added with advantage: "Go to the beasts of the field, the fowls of the air, the fish of the sea, and even crawling things, for a lesson in common sense, and take an example from them in sanitary matters, and not harbour in your insides offensive and disease-generating material which you would not tolerate for a moment within range of your vision or olfactory nerves."

Dr. Bell uses not a mineral caustic but an organic one—formic acid—and he does not commit himself to its use alone, relying on quite an up-to-date armamentary of therapeutic, dietetic, hygienic, injection and organo-therapeutic measures. Nevertheless, I see in his descriptions of the use of formic acid only a reproduction of what was written more than half a century ago of arsenic and zinc sulphate. Here are some quotations from Dr. Bell:

I am convinced that the injection of formic acid into the tumour will prove of immense service in destroying the cancer cells which have accumulated there. This fact it has been my privilege to demonstrate on many occasions, and the following instance of its beneficial effect will, I trust, place its efficacy beyond dispute. This was a case of sarcoma of the right testicle, which, when it came under my observation, had attained the size of a football. Moreover, there was a considerable involvement of the inguinal glands. It certainly was not a promising one for treatment, and I submitted the case to several medical men, who were unanimous in this opinion. In the presence of some of these I injected into the tumour 2 drams of 50 per cent. solution of formic acid, and repeated this

at intervals of a few days on two other occasions. This had the immediate effect of destroying the morbid cells, and within five weeks the tumour was reduced to the size of a tennis ball. In another month there was no trace of the disease remaining, and the patient has now resumed his usual occupation.

I should add that I do not invariably employ such a strong solution, but, as a rule, especially in cancer of the breast, inject a solution of from 12½ to 15 per cent. strength. During treatment it is my custom to supplement this by the intermuscular injection of atoxyl, which is described upon page 94. I also deem it imperative that a strict dietetic regimen be adhered to; also that the bowels be completely emptied every day, and that thorough ventilation of the dwelling be insisted upon. Of course, it goes without saying that if the disease has proceeded beyond a certain point, and metastases have taken place, neither the injection of formic acid nor any other local treatment will prove successful; that is to say, if the secondary deposits are beyond reach or numerous. On the other hand, I have known of many instances where the dietetic and hygienic measures referred to, in conjunction with intermuscular injections of atoxyl, have been sufficient to effect a complete cure, and I have also on record many instances where recurrence after operation has also been overcome by the same means.

Two other quotations will give a more precise idea of Dr. Bell's caustic treatment:

I therefore determined to inject formic acid of 15 per cent. strength, which within two weeks resulted in complete enucleation of the morbid growth, also softening and absorption of the axillary glands which were injected at the same time.

Formic acid of a suitable strength, varying from 50 per cent. to 15 per cent., when injected into a malignant growth, is possessed of a selective power upon the morbid cells, destroying these, while the normal cells are left intact, and this is all that is claimed for radium.

By employing atoxyl Dr. Bell reverts to the centuries-old use of arsenic, Dr. Bell's "aquateoxyl," the form in which he employs for injection, being merely a solution in water of an organic compound of arsenic. By asserting that formic acid has a selective action upon cancer cells, sparing normal cells, Dr. Bell seems to argue with the practitioners of olden times and with their more outspoken colleagues of to day in the cancer-curing business, who assert or imply that their cancer plasters "not only destroy the tumour itself, but penetrate by a sort of intelligent power or elective affinity in certain directions, corresponding exactly with these supposed roots of the cancer, eating away or drawing out these roots without affecting the sound flesh in which they are ingrafted."

I have quoted what Sir Spencer Wells said in 1857, but I might have used the language of the arrant quacks whose references to the "roots" of cancer I have already reproduced when describing the employment of mineral caustics.

In the North, at Accrington, Dr. Fenwick practises the cure of cancer by injecting potassium bichromate, and the JOURNAL has published some of his cases. His methods and his results differ from those of the cancer curers of old in the employment of a caustic not known to them. A visitor to this country who has also been in communication with Dr. Fenwick is Professor Laurent of Brussels, but although impressed with the virtues of bichromate, he advocates the injection of formalin as his speciality.

In the South there is a Dr. Lane who had, or had attempted to obtain, a home for the cure of cancer by a secret remedy. I have not been able to trace I. R. Guelph-Norman, M.D., Dr. J. L. Bohannon, Dr. E. P. Vines, Dr. J. N. Tucker, but I suspect them of being of American extraction, even if they practise in this country personally and not merely by correspondence.

In Glasgow there is Dr. Hugh Murray, consulting surgeon to the "Glasgow Cancer and Skin Institution," Newton Terrace, Charing Cross, Glasgow. Of this institution an Edinburgh solicitor is, or was, chairman. It issues a prospectus from which the following is taken.

In most cases there had been one, two, or more surgical operations before they (the patients) went to that institution, where the cancer was eliminated by medical treatment. These facts were beyond cavil, and should convince any one that medical treatment was the treatment, which ought to be applied for the elimination of cancer. Many of the cases consisted of cancer of the lip, caused by the tobacco pipe, and a number of these patients had also undergone surgical operations before appealing to the institution, where they were restored to health by medical treatment.

It seems, therefore, to preach a crusade against surgical treatment and to advocate drugs. The institution here referred to must not be confounded with the highly reputable Glasgow Cancer Hospital.

Humbbug is rife indeed when even the managers of the Royal Infirmary of Manchester accept money for the promotion of cancer research, but forbid experiments on animals to advance this end while condescending to accept the contributions of the Manchester Branch of the Theosophical Order of Service for the Abolition of Vivisection, Vaccination, and all Inoculations. I am truly sorry for my native town, to know that its hard-headed inhabitants put up with such arrant nonsense. Under such limitations is not cancer research open and unabashed quackery, pretence at research, a making of promises to advance knowledge that cannot be fulfilled?

PANICS AMONG THE MEDICAL PROFESSION.

It has fallen to my lot in the brief space of less than ten years to witness what I cannot designate otherwise than the medical and surgical professions "panicking" under the notion that the cure for cancer had been discovered, but was being deliberately ignored or suppressed by authority. It hardly requires to be pointed out that no amount of authority would suffice to rob the discoverer of a certain cure for cancer of his just reward. The panics have been about x rays, high-frequency currents, trypsin, "papaw" and other ferments, and radium. I need say nothing about these flutterings in the minds of the credulous members of the profession, except in relation to radium. The Imperial Cancer Research Fund has been in possession of a very active sample of "pure" radium bromide since early in 1904. Valuable as the therapeutic action of radium no doubt is in many directions, and even though it has not yet had a fair chance as a therapeutic agent in the treatment of cancer, this much is evident, it is not the long-sought for "cure" acting specifically upon the cancer cell, hindering its spread and preventing its establishment in remote parts of the body. Radium is the latest and perhaps the best caustic, and, like all caustics used in the treatment of cancer, its action is not limited to cancer, for which it has not been shown to have an elective affinity. The therapeutic value of radium rests at present upon its successful employment to treat other than cancerous conditions.

THE MORAL.

The moral of all the familiarity with cancer and all the quackery associated with the exploitation of those sufferers who would fain find an alternative to the knife is simply this. A secret remedy for cancer is possessed by no man nor woman. If it existed, its success would speedily cause all human endeavour to concentrate upon its divulgence, and no quack could retain it for himself alone. That form of treatment which is public property—namely, removal by surgery—has nothing to fear, but, on the contrary, much to gain by comparison with its only competitor, removal by caustics. In this one word, "caustics," can be summed up the direct application of all the suggested substitutes for the knife, from trypsin and radium to potassium bichromate, formic acid, formalin, and arsenic. Thus Dr. Robert Bell, Dr. John Shaw, and others in London, Dr. Fenwick in Accrington, Dr. Hugh Murray in Glasgow, have not taught the medical profession or the public anything new. The removal of the cancer by caustics is not of their invention, but one of the oldest procedures in medicine, the only new thing about this treatment being its application to a new generation of the suffering. Notwithstanding the clear demonstration that cancer is circumscribed and not constitutional in origin, the credulous are still deluded into a belief that this method has the advantage of extracting something which the knife simply cuts off and leaves behind. Such people accept a false pathology and—to give one last quotation from one of the most advertised cancer cures of our time—also a misrepresentation of surgical treatment:

If one desires to clear a piece of ground of weeds, will one succeed, think you, if he contents himself by merely lopping the heads off the obnoxious plants?

THE EXPERIMENTAL REFUTATION OF THE ASSERTIONS QUACKS MAKE ON THE CONSTITUTIONAL NATURE OF CANCER.

This is not the place to enter into the advances in knowledge effected by experiments on cancer in animals. Their bearing upon the circumscribed nature of cancer, and the demonstration they afford that early surgical

removal is the only rational treatment at the present time, may be stated. The transference of cancer is effected by inoculating a piece of tumour tissue as big as a pin's head under the skin of another animal of the same species. Under given conditions all the phenomena characteristic of the natural disease follow—infiltration of neighbouring structures and widely disseminated secondary growths. If removed surgically, at a sufficiently early stage, the phenomena of dissemination do not take place. No ambiguity exists, under experimental conditions, as to the ultimate value of surgery, since a complete life-history is obtainable for every animal. Pathological examination of all tumours and a complete *post-mortem* examination of every animal is made, whether suffering naturally from cancer or inoculated with it. In a similar way the value of surgery has been tested in animals suffering *naturally* from cancer, and its great value as a curative method, and in prolonging life while at the same time freeing from distress, has also been demonstrated. Thus there was obtained a demonstration (1) of the rational basis upon which rests the early surgical removal of cancer in men, and (2) of the minuteness of the focus from which all the trouble is spread throughout the system; in short, experiment settled, once and for all, whether those who have postulated the origin of cancer in a circumscribed area were right, and those who postulated a diffuse or constitutional origin were wrong. Emboldened by the far-reaching consequences of the demonstration obtained for the miniature lesions of cancer as seen in the mouse, its lesson was applied seven years ago, with the collaboration of Mr. Butlin, now the President of the Royal College of Surgeons, to the clinical diagnosis and surgical treatment of cancer in man, with the result that lesions of the tongue which previously would have been regarded as not malignant at all, or, if suspicious, regarded at most as pre-cancerous stages, were demonstrated to be already fully developed malignant new growths in miniature, like those artificially produced in the mouse. Thus experiment led to what has been little less than a revolution in the treatment of cancer of the tongue, and the results of this revolution stigmatize the watching of a doubtful lesion of the tongue—be it a mere pin's head in size—as gross neglect of the opportunities offered by surgery. To await developments in such cases is quite unjustifiable, as I can assert from repeated experience of the disasters it draws after it.

A PRIMIPARA of Swedish birth, aged 22, was admitted into a New York maternity hospital under Dr. W. M. Hartshorn (*Amer. Journ. Obstet.*, April, 1911, p. 658). Three years previously she had suffered from slight cinchonism after 4 grams of quinine taken for a cold. She was well nourished, and there was no history of any previous malady. Cinchonism occurred on a second occasion, but, as before, the symptoms were trifling. She was delivered in the hospital spontaneously, and slight *post-partum* haemorrhage ensued. In order to hasten involution two pills were administered on the eleventh day. Each contained $\frac{1}{2}$ grain of quinine $1\frac{1}{2}$ grain of ergotin, and $\frac{1}{2}$ minim of tincture of digitalis. On the next day the temperature rose to 102.6° F., although there was no subjective symptom beyond a slight burning sensation in the face. The temperature fell, after free purging, to 100° F., and rose again to 101.6° F. The face during this time became greatly swollen, and the entire body was covered with a scarlatiniform eruption attended with severe irritation. The pills were, it appears, continued for several days; a rhubarb and soda mixture, magnesia citrate, and a soothing ointment were also prescribed. A drug toxæmia was suspected, the history of cinchonism being taken into account. On discontinuing the pills the temperature dropped from 103.6° F. to 100° F., but rose again on the next afternoon to 103° F. A few hours later it fell to 99° F., and remained normal afterwards. Extensive desquamation of the entire epidermis occurred during the three days succeeding the final fall of temperature. In the discussion which followed the reading of this report at a society meeting some scepticism about diagnosis was expressed, but Dr. Hartshorn declared that the essential throat and kidney symptoms of scarlatina were quite absent, nor did the rash indicate any other of the exanthemata. The desquamation was in the form of large epithelial scales, and began within two days after the temperature fell to normal. No other similar case developed amongst the patients and nurses in the maternity hospital.